Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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Letters to the editor

E-Cigarette Use and COVID-19: Questioning Data Reliability

To the Editors:

We read with interest the study by Gaiha et al. [1] which examined the association between e-cigarette use and COVID-19. The authors found a statistically significant association between ever, but not current, e-cigarette use and COVID-19. It is not biologically plausible that e-cigarette trial or experimentation would cause effects that result in stronger predisposition to COVID-19 than current/regular use. Therefore, no causal link between e-cigarette use and COVID-19 can be implied. While the high proportion of ever e-cigarette users who were reportedly tested for COVID-19 could explain the high rate of COVID-19 diagnosis, the reliability of participants' responses is questionable. In accordance with the Centers for Disease Control and Prevention (CDC), 7,362,526 COVID-19 tests were performed in the U.S. population from March 1 to May 16 (2 days after survey completion) [2]. A weighted proportion of 35.4% of adolescents aged 13–17 years (NYTS 2019) and 25.8% of Americans aged 18–24 years were ever e-cigarette users [3]. The total population of these age groups in the U.S. was derived from U.S. Census Bureau data (2018) [4], and was estimated at 20,818,953 aged 13–17 years and 30,373,478 aged 18–24 years (with 7,369,909 and 7,836,357 being ever e-cigarette users, respectively). Thus, the proportion of ever and never e-cigarette users who were tested for COVID-19, according to the study by Gaiha et al. [1], translates to 4,712,308 tests performed in age group 13–24 years (2,661,097 tests in ever and 2,051,211 tests in never e-cigarette users). This represents 64.0% of all tests performed in the U.S. until May 16, a gross overestimation considering the inadequate testing capacity at that time and the strong priority given to people at risk for severe COVID-19. The CDC reports that less than 5% of COVID-19 tests were performed in children <18 years of age [2]. Thus, the findings by Gaiha et al. [1] are almost certainly based on false reports by the participants. Finally, the proportion of participants aged 13–24 years who reported having a diagnosis of COVID-19 would represent 46.8% of all U.S. confirmed cases until May 14 [5], which is probably another gross overestimation.

In conclusion, the findings by Gaiha et al. [1] cannot be considered valid and population representative, probably due to serious response bias and the approach of adjusting an online convenience sample to a population-based sample through weighting. In addition, the link between ever, but not current, e-cigarette use and COVID-19 suffers from biological implausibility. The authors should probably reconsider the conclusions and interpretation of their study as presented in the manuscript and the accompanying press release.

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